California GARDEN

JANUARY–FEBRUARY 1986
One Dollar
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Rhipsalidopsis

HORTICULTURE CALENDAR

* *San Diego Floral Association Event*

January 9	**Camp Pendleton Tour $18.50.** Pickups in Balboa Park, La Jolla, Carlsbad. Includes Ranch House tour (former home of Pio Pico, last Governor of California under Mexican rule), lunch in the mess hall, LVT museum tour, dog demonstration. 232-2662 for reservations.
January 11 & 12	**San Diego Rose Society Pruning Demonstrations** Parker Rose Garden, Balboa Park, San Diego Sat: 9-1 p.m.; Sun: 10-1 p.m. Free
January 18 & 19	**San Diego Camellia Society Mini Show** Casa del Prado, Majorca Room, Balboa Park, Sat: 11-4:30 p.m.; Sun: 10-4:30 p.m. Free
January 27	**Edie Pate** from Fresno, CA, a unique designer, will use fascinating woods and innovative containers to demonstrate floral arrangements. 11:30 a.m. luncheon at House of Hospitality, Balboa Park. 1 p.m. program by Edie Pate. Call 232-5762 for further information and and reservations.
February 1 & 2	**San Diego Camellia Society 39th Annual Spring Show** Casa del Prado, Majorca Room, Balboa Park. Sat: 1-5 p.m.; Sun: 10-5 p.m. Free
February 6, 13, 20, 27	**Thursday Workshop with Colleen Winchell** Free Floral Crafts Instruction - Open to the public. Casa del Prado, San Diego Floral Association Library, Room 105 Balboa Park, Thurs: 10-3 p.m. Information: 479-6433
February 14, 15, 16	**Farm Conference 1986 with Wendell Berry as keynote speaker,** University of California, Davis, California. Contact Christie Wyman: Small Farm Center, UC Davis (916) 752-6690.
February 15	**Descanso Garden, La Canada, CA Tour $19.50** Pickups in Balboa Park, La Jolla, Carlsbad. Camellias, deciduous flowering trees and shrubs, early bulbs, 165 acres of native chaparral covered slopes. Lunch on own at cafeteria in Pasadena. Call 232-2661 for reservations.
February 18	**San Diego Floral Association Meeting** Casa del Prado, Majorca Room, Balboa Park. Contact JoAnn Gould for information and reservations. (619) 232-5762.
February 22 & 23	**San Diego Orchid Society Spring Mini Show** Casa del Prado, Majorca Room, Balboa Park Sat: noon-4:30 p.m.; Sun: 10-4:30 p.m. Free.
March 1, 2	**San Diego Daytime African Violet Society's 5th Annual Show** Casa del Prado, Majorca Room, Balboa Park Sat. & Sun: 10-4:30 p.m. Free.
March 13 & 14	**The Flower Arrangers Guild of Southern California Presents:** **"PATTERNS OF BEAUTY — THE CREATIVE WAY"** San Marino Woman's Club, 1800 Huntington Drive, San Marino, California. Donation: $3.00. Free parking. Thurs., March 13: 1-7 p.m.; Fri., March 14: 10-5 p.m. Bus tours welcomed.
April 12 & 13	**59th Annual Rose Show,** Balboa Park Club, Balboa Park Entries: Sat: 7-10 a.m. Show Sat: 2-6 p.m.; Sun: 10-5:30 p.m. Open to public. Admission $1.00. Contact: (619) 444-2552 (Show Chairman).
April 26 & 27	**Coronado Floral Association 61st Annual Flower and Garden Show** Spreckles Park, Orange Avenue between 6th and 7th Streets, Coronado. Free Parking. Admission: Adults $1.50; Children $.25.

Spring Flower Arranging Classes are being planned. Call 298-5182 after February 15 for information.

Deadline date for all Horticultual Events to be listed in Mar/Apr issue is February 1, 1986. Submit to **California Garden,** San Diego Floral Association, Inc., Casa del Prado, Balboa Park, San Diego, CA 92101-1619.

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In November/December 1985 issue, Volume 76, No. 6, the captions for the two pictures on page 173 were reversed. Tagetes lucide is the top left picture and Houttuynia cordata is the lower right picture.

FRONT AND BACK COVER DRAWINGS BY HELEN BARKDOLL

For ten dollars a year, a garden club may become an affiliate member of San Diego Floral Association. This entitles the club to a year's subscription to California Garden, to be listed as an affiliate member in each issue of the magazine, showing name of president, phone number, address, place of meeting and time of meeting. It also provides one free ad per year, space permitting, in the magazine. Affiliate members are responsible to keep us informed of any changes in their listing.

Camera-ready garden related advertising may be placed in California Garden at the following rates:

SIZE	ONE-TIME	THREE TIMES	SIX TIMES
1-inch	$10.00	$ 9.00 each	$ 8.00 each
2-inch	$15.00	$14.00 each	$13.00 each
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Back cover (outside)	$90.00	$90.00 each	$85.00 each

We reserve the right to make final determination as to the suitability of any advertisement. Advertiser will pay for the cost of artwork, if required. California Garden is published at 10% reduction in size. If you desire to advertise in California Garden, request a copy of the Advertising Contract.

Deadline dates for horticultural events, advertising contracts, changes to listings, and other material for California Garden are: Feb. 1, Apr. 1, June 1, Aug. 1, Oct. 1, and Dec. 1.

We can no longer provide a replacement copy free of charge if you fail to notify us of a new address at least 60 days in advance.

To remind you that your subscription is due to expire soon, a stamp "SUBSCRIPTION EXPIRES NEXT ISSUE" will be stamped on or near your address label on the issue prior to expiration date. On the following issue, a stamp "SUBSCRIPTION EXPIRED THIS ISSUE" means you are automatically dropped from the mailing list unless a renewal is initiated within that month. Make your renewals early to avoid missing an issue.

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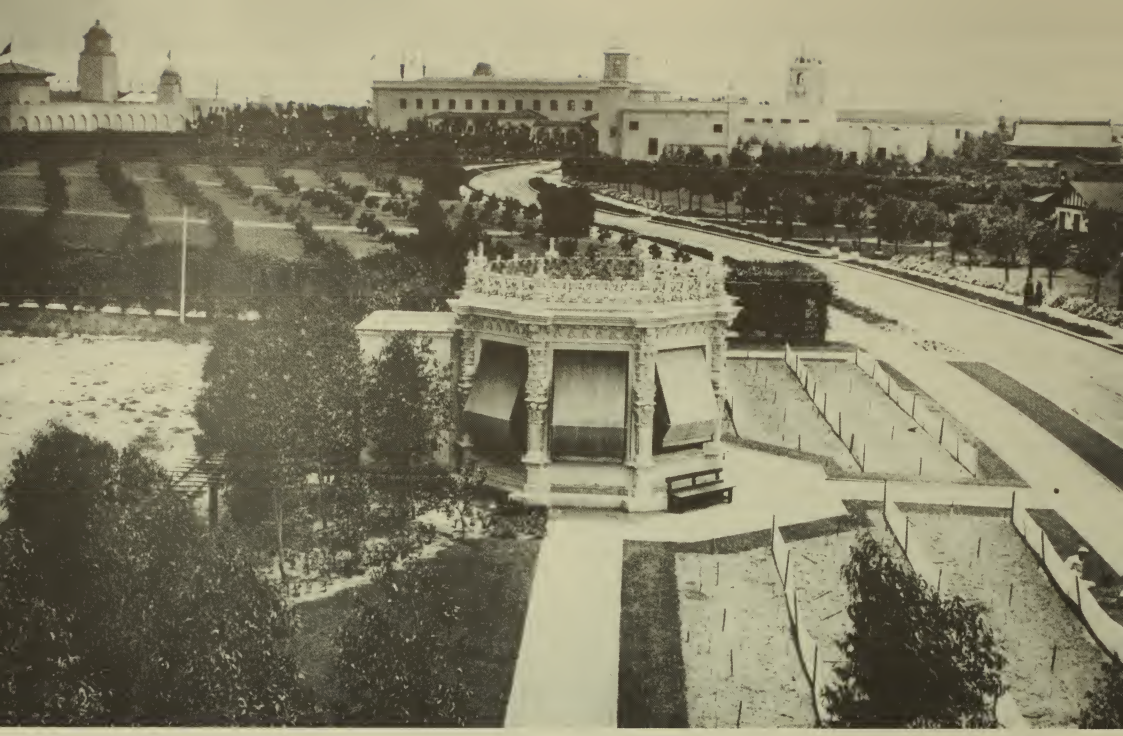


Singhalese workers planting tea in Balboa Park. Note the wind breaks. Tea was served in this Lipton Pavilion. Photo: San Diego Historical Society, Ticor Collection

Tea Growing in San Diego

by Barbara Jones

YES, THERE WAS a Tea Plantation in San Diego: the plants grew and a crop was harvested and for two years San Diegans enjoyed locally grown afternoon tea.

In 1902, when Congress passed the Spooner Act authorizing the construction of the Panama Canal, it was decided that there should be a World Fair (Exposition) to commemorate the 1915 opening of this wonderful engineering marvel. (It truly is one. I went through last year by boat. Amazing!) San Francisco petitioned for and was awarded the right to hold an Exposition. In 1906, after its infamous earthquake, San Francisco decided it would be impossible to fulfill its commitment, so San Diego petitioned for it. Then, San Franciscans decided, having made a remarkable recovery, that they again wanted the world fair. By then San Diego was well into plans and very excited about the whole idea. A long story here, but the outcome was that there would be two fairs. The official International Exposition would be in San Francisco, and San Diego would have the Panama-California Exposition. (In 1916, San Diego's became the Panama-California International Exposition after the one in San Francisco ended. Many countries moved their exhibits to San Diego.)

This presented the city planners with a problem: how to have something different that would entice visitors to come to San Diego. Now, here is where the San Diego Floral Association comes into the picture. It and this magazine were already in full steam, beautifying the city and telling long-time residents and newcomers what and how to grow. A.D. Robinson, the founding president and this magazine's founder, suggested to the city that they make it a garden fair. Well, everyone took up the idea, and it was decided that this should be the theme. Half of the whole Fair was to be devoted to gardens and plantings. Col. D.C. Collier, chairman of the committee, traveled around the world enticing important garden businesses to build gardens here or make exhibition

growing beds. Sir Thomas Lipton was one of those who was convinced to construct a garden. (He was always looking for new areas to try out his tea plants, anyway.) He sent a boatload of 200 mature commercially bearing tea trees to San Diego. The trees, in soil from his Colombo, Ceylon plantation, were planted in boxes and placed under glass. He also sent one of his head gardeners and Singhalese workers — men to garden and women to pick, roast, and serve the tea. He built a charming eight-sided tea pavilion in Ceylon-British style in the middle of the plantation. All during the two years of the Exposition (1915-1916) fresh picked tea was served to visitors.

Sir Thomas Lipton decided that tea plants would grow here, but he told members of the California Garden staff that he felt the plants would do better farther inland behind the coastal fog belt (about 25 miles inland). He did plan to move the plants and try commercial growing, but along came World War I. Balboa Park was turned into a military hospital and the plans were abandoned. No one knows what happened to the tea trees. For many years the tea pavilion was the south gate of the Zoo. It was destroyed when the Otto Center was built.

Tea, **Thea sinensis**, is a member of the Theaceae. Camellias, which grow very well here, are a member of the family. If one can grow camellias in their garden, tea should grow. It is an attractive plant and, when the leaves are continually picked, makes a nice low shrub. In Japan many old gardens are edged with tea plants, and the leaves are picked and used by the owner.

Imagine the amazement of your guests if you brewed your tea from your own garden. It is possible here, even today. Wouldn't it be fun to grow?

Author's note: *Monthly reports concerning all aspects of the planting being done are to be found in* ***California Garden*** *magazine for the years preceding and during the Exposition.*

Barbara Jones is a member of the San Diego Historical Society. She is also President of the San Diego Floral Association.

Bridges in Japanese Garden — 1915

25 YEARS AGO

SAN DIEGO HISTORICAL

by Carol Greentree

TWO FAMOUS JAPANESE GARDENS

The recent alliance of San Diego with Yokohama as sister cities has started a new wave of interest among San Diegans in Japanese culture. A bell house on Shelter Island for the Yokohama friendship bell, a tea house in the House of Pacific Relations garden in Balboa Park, and a Japanese garden on the grounds of the Naval Hospital have all been dedicated within the past year. Still, we have nothing to compare with two Japanese gardens that were major tourist attractions a generation ago.

The first was in Coronado, where the Marsh family of San Francisco built an authentic Japanese tea garden about the turn of the century. Curving paths, rock steps, a pond, secluded benches, an authentic tea house, (including a "shoe-removing" stone), all helped to create a picturesque setting, and a memorable one, since many people remember it with great nostalgia.

The original Marsh garden suffered an ironically Japanese fate: in 1903 it was destroyed by an ocean storm.

Even more famous than the Marsh garden was the Japanese tea garden created in Balboa Park for San Diego's 1915 Exposition.

In addition to authentic stone lanterns, a lacquer bridge and a wishing well, the Japanese government sent its own experts to supervise design and construction of the garden and building.

From 1916 to 1942, the Hachisaku Asakawa family leased the garden and tea house from the city and maintained them for the public's enjoyment. The Asakawas introduced many Oriental plants in Balboa Park, including the first Sago palms (**Cycas revoluta**) to be planted there.

The tea garden is gone, but not forgotten. Countless visitors and San Diegans sipped tea there during a quarter century which included two major expositions. Returning visitors still inquire about the tea garden, and San Diegans are apt to mention it whenever Balboa Park comes under discussion (G.L.)

Those Fabulous Holiday Cacti

by Helen Barkdoll

They are popping up everywhere. In the supermarkets you can find the bright shining flowers all wrapped in cellophane with a huge name printed in red **ZYGOCATUS.** The drug stores and dime stores carry them near the check-out counter. Considered an impulse item, they are displayed in a prominent place. But what an impression these little houseplants make on all who see them. The jewel-toned flowers capture your heart and the only problem you now have is to decide how many and what color. Their sparkling 2 to 3-inch flowers on small compact plants make an ideal gift, a gift that spreads happiness year after year, and can continue from one generation to the next.

Zygocacti are botanically **Schlumbergera** hybrids, developed by hybridizing **S. russelliana** with **S. truncatum.** Many common names can be found for this delightful plant, and you may have to use all of them before you and the clerk realize you are talking about the same plant. Christmas Cactus is probably the best known, followed by **Zygocactus,** Zygos, and crab or crab-claw cactus. By any name, they are probably one of the best known and best loved houseplants throughout the world.

Spectacular in full bloom, the flowers are especially beautiful with their glimmering satin sheen. The newest hybrids now come in many colors, with delicious names, such as 'Peach Parfait' (a shimmering light coral) and 'Twilight Tangerine' (a light orange). At last, the long awaited genetic breakthrough has been accomplished. A yellow colored 'Gold Charm' has been developed. Temperature sensitive, the flowers can turn a pinkish white if exposed to under 50 degrees F.; but at room temperatures, it is a bright cheerful yellow. Other colors included fluorescent purple, bright magenta, soft lavender, orange, red, two-toned, and, of course, the dazzling 'White Christmas'.

These plants can flower from early September to late March depending upon temperature and light intensities. The nursery trade tries to have a variety of plants in full bloom during the cold bleak winter months, as they are one of the few easy-to-flower houseplants for seasonal gift giving.

Easter Cactus is another one of the Holiday Cacti that can bloom during this period and also a little later in the year. Cultivars have been developed by the hybridization of the two true species, **Rhipsalidopsis rosea,** which has small segments and small delicate pink blossoms, and **R. gaertneri,** which has larger segments and large 3-inch brilliant red flowers. This plant is harder to find, and does not have the commercial success of the Zygos, but it makes an equally beautiful and interesting houseplant. Intense radial (daisy-shaped) flowers come in clusters at the tip of a segment. Sometimes it is wise to disbud the plant to the largest and the smallest bud on each stem. This produces larger flowers over a longer period of time. These plants have been known to bloom themselves into oblivion, so disbudding by gently twisting off the bud will make a better looking and healthier plant.

Both the Easter and Christmas Cacti are tropical cacti and, as such, should be treated differently than spiny desert cacti. They thrive on humidity and moderately warm temperatures. Since they are epiphytes that originate in tropical jungles, care should be taken to duplicate their natural conditions as much as possible. They need fast draining soil with plenty of humus, staying neither wet nor drying out, but rather a light moist soil at all times. Fertilize all year around with a very dilute solution of a balanced fertilizer which has less than 10 percent nitrogen, or use time release granules. Place in plenty of light, but not direct sunshine.

The Holiday Cacti is an exciting group of flowering houseplants to brighten the winter months everywhere. In southern California they can be treated as porch and patio plants, making spectacular cascading hanging baskets. Which one to choose? Buy one of each. And once you have them, you may be so fascinated that they will become the start of a new hobby, collecting all the many different, brilliantly-colored, hauntingly-beautiful Holiday Cacti.

Helen Barkdoll is an active hybridizer of epiphyllum, and enjoys writing and illustrating.

SEE THE COVERS FOR ILLUSTRATIONS OF "THOSE FABULOUS HOLIDAY CACTI"

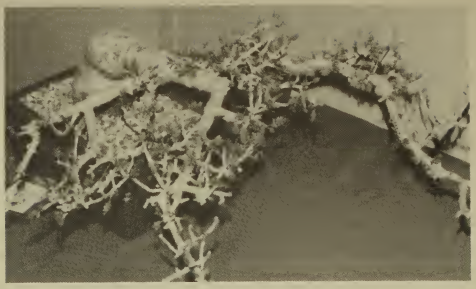
Some Succulent Trees

by Rick Latimer

The succulents of the world are found in many different plant families, such as cactus, spurge, milkweed, ice plant, stonecrop, lily, and oleander. These plants are most often native to three continents: Africa, and North and South America. The plants themselves range in size from very small single plants to low mats, to bushes, and up well into the tree range with none anywhere near as tall as the tallest trees. Some of the plant families with succulent members have no tree-sized species, such as the ice plant family. Others range from very small to tree size like the cactus family with the tall saguaros of Arizona and the tall cardons of Baja California and the spurge family with the tall **Euphorbia ingens** trees of East Africa, and not uncommon in San Diego gardens. However, these highly succulent plants do not look like trees in the classical sense, that is, with a woody trunk, many branches, and leaves. The plants covered in this article are some of the species of various plant families that look like typical trees, but whose trunks have been thickened into storage tanks like the other stem succulents. Needless to say, these plants are native to areas that experience droughts at least some part of the year.

The first group includes two unrelated species of elephant trees of Baja California. The first one, actually several different species, belongs to the incense tree or torchwood family and resides in the genus **Bursera,** while the other is a member of the sumac or cashew family and belongs to the genus **Pachycormus.** They are called elephant trees because their trunks are swollen and out of proportion to their height (thick like elephant legs) and make natural bonsais (but need not be watered so often), especially dwarfed forms found in certain locations.

In Baja California, **Pachycormus discolor** is called "Torote Blanco" and is endemic there. The beautiful whitish bark peels off in sheets. The sap hardens and plugs up any wounds. The small green leaves quickly drop in dry periods. June to August is the blooming season. The flowers are small and uninteresting individually, but they bloom in such numbers that the desert is transformed into a heavenly sight. A comparable sight is the Palo Verdes of Arizona, which blooms yellow in May. The flowers range (they are all the same color on individual plants) from very pale pink to dark pink or a dirty yellow. Some plants are covered with the orange parasite, dodder, common to parts of San Diego County, but do not seem to be affected. It is quite a sight to see two white barked specimens growing next to each other, one with pink flowers and the other with a deadly



Bursera microphylla dwarfed due to prevailing sea breezes "natural bonsai" – at SDCSS show.

crown of orange "witch hair." The habitat begins near Catavina and extends southward. Plants favor rocky hillsides and grow in the company of the boojum tree and the cardon. The tallest specimens reach up to 30 feet tall and oddly are only found on the ancient lava flows from the volcano between San Ignacio and Santa Rosalia, Baja California. An interesting question is if most specimens are only found on rocky hills, why do those living near Punta Prieta survive happily on flat ground? Some of its world-wide relatives are pistachio, mango, smoke tree (**Cotinus**), and the varnish tree (**Toxicodendron**).

The genus **Bursera** belongs to the **Burseraceae** and is named for Joachim Burser, a 16th century botanist. The genus contains about 40 species, mostly tall trees of tropical America. The succulent **Burseras** are native to Mexico, with one species **B. microphylla** ranging from the tip of Baja up north into the Anza-Borrego Desert in California and over into Arizona and Sonora, Mexico. The bark of this specie is easily carved and the red sap almost looks like blood. The plants have a turpentine-like fragrance, a characteristic of this genus, which the **Pachycormus** plants do not have. The flowers are inconspicuous and the fruits look like miniature plums and are as aromatic as the rest of the plant. I do not know if they are edible, but with the hard seeds taking up much of the room, there is not much left anyway. The nomenclature of this genus is confusing; however, it is divided into the "copales" with grayish, non-peeling bark and the "cuajiotes" with peeling papery bark.

Two African relatives from Somalia and Ethiopia of the same family are **Commiphora abyssinica** (myrrh) and **Boswellia carteri** (frankincense). The first one generally forms low bushes not too different from some bursera specimens, but the second one forms erect trees that are only found on the sides of cliffs. The bases are thick and fill up any space available in the cracks between the rocks, giving the trees an appearance of having feet. The species is endangered, and I hope attempts to grow them from seed succeed - en masse! A succulent commiphora from Madagascar is **C. monstruosa.**

A closely related family is the **Icacinaceae** which among other plants is included the maples, but also some little known African succulent trees of the obscure genera **Trematosperma** and **Pyrenacantha.** Succulent explorer Frank Horwood, formerly from England, now residing in Santa Barbara, once found a **Trematosperma** specimen that was completely rotted out in the center and had a **Sansevieria** growing inside it!

Closer related to the **Icacinaceae** than the **Icacinaceae** is to the **Anacardiaceae,** and the **Burseraceae** is the **Vitaceae** or Grape family. It has two genera with succulent members: **Cissus** and **Cyphostemma.** However, only the second genus has succulent trees for members. **C. currorii** and **C. juttae** are the giants of the genus. The latter species may reach 20 feet in height and 3 feet wide at the base. The leaves are deciduous in our winter; are bluish, and are quite large; about a foot long and are boat-shaped. There are grape-like fruits, but they are high in oxalic acid content, and are quite poisonous.

A plant family very distantly related to any of these succulent trees is the **moraceae** or fig family. However, like the **burseraceae,** it has succulent representatives in East Africa and Baja. The Baja plants belong to the genus **Ficus** and are the two species **F. palmeri** and **F. brandegeei** (some authorities say they are the same species). Both are white barked trees which prefer cliffsides, and send their roots down into every crevice. Yet there is one famous plant that sits right on the beach near Puerto Escondido south of Loreto. A mainland Mexican specie is **F. petiolaris** with red veins in its leaves. The East African species belong to the genus **Dorstenia.** The tallest one **D. gigas** may get as tall as four feet. The inflorescences include tiny flowers arranged on a flat disc which rays with rounded tips surrounding them. It looks like a modern sculptor's version of the sun done in bronze miniature! In fact, like a fig opened up and laid flat.

Some other succulent trees are out there in the wilds, but are not commonly grown or well known, nor is there much information on them. There are the **Brachychitons** or bottle trees of Australia, the **Opercularia** trees from Madagascar, and the **Moringas** of Africa and Madagascar. From the island of Socotra, there is the wierd cucumber tree **Dendrosicyos socotrana.** It may reach 20

Cyphostemma juttoe specimens – only about 1 foot high. At SDCSS show 1983.

feet tall and three feet thick. And we cannot forget **Sesamothamnus lugardii** from East Africa and a member of the sesame (**Pedalinaceae**) family. The branches are thick and thorny and the trunks may exceed 6½ feet in diameter.

The last plant family that we will cover is the **Bombaceae.** A closely related family is the **Malvaceae,** which includes cotton, hibiscus, hollyhock, and marshmallow. There are succulent members in both hemispheres. In the Americas there are the Mexican **Ceiba** species and from South America come two of the kapok trees **Chorisia speciosa** from Brazil with purple flowers, and **C. insignis** from Argentina with white flowers. Both trees look alike without flowers with the same green trunks covered with rose-like thorns (some specimens may be nearly thornless), deciduous palmate leaves, and avocado-like fruit which is full of fluff. Another Mexican member is **Bombax ellipticum.** The bark is distinguished by ribbons of green bands and the flowers look like old fashioned shaving brushes. However, the largest succulent of them all also belongs to this family - the baobab.

The baobab (**Adansonia digitata**) is not exceptionally tall (never over 45 feet), but the circumference of the trunk is not infrequently over 75 feet, and about 24 feet across. One giant has been measured to be over 130 feet. Sometimes

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the center of the plant may become hollow. A few specimens in the wild have been put to unusual uses: a post office, a jail, and even an out-house! Large specimens with hollow interiors have been used as hiding places by animal poaching gangs. The combined lateral spread of the branches is often greater than the height of the tree. Legend has it that the tree is actually planted upside-down. The huge trunk is supported within a mass of fibrous tissue, but there is no wood in the popularly accepted sense. The rest of the bulk is composed of soft water storage tissues. The life span is unknown and controversial. Some say that they get as old as 2000 years; however, since there are no annual growth rings, dating is difficult. Mature plants have 3-7 lobed leaves, while seedlings have undivided leaves. The flowers are white and last only one day. They have no scent, but give off an offensive odor if damaged. The fruits are edible and are called monkey bread and taste like cream-of-tartar. The baobab is native over a wide range of tropical Africa. The island of Madagascar has at least seven species (such as **A. za, A. grandidieri,** and **A. madagascariensis).** From Australia comes **A. greggori.**

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Rick Latimer is a member and former president of the San Diego Cactus and Succulent Society. He is also a member of the Palomar Cactus and Succulent Society and writes frequently for Cactus Society bulletins.

California Macadamia Society

Fallbrook Library's Assistant Branch Manager, Florence Hauser, accepts yearbooks of the California Macadamia Society from Mrs. Edi Westree, a Director Emeritus of the society. Yearbooks are the principal source of information, both technical and practical, on the culture of Macadamia trees. The books cover the years from 1957 to 1981 and are the bequest of the late Mrs. Edie Day. Mrs. Day was a Macadamia grower in the Escondido area.

The California Macadamia Society has been an enthusiastic participant in the Southern California Exposition at Del Mar and the Los Angeles County Fair at Pomona. Original exhibits, constructed and manned by volunteer members of the Society, have won awards in their assigned categories. This year's second place award at the Los Angeles County Fair was accompanied by a plaque for five years of attendance.

Persons wishing to obtain information about the Macadamia tree in California may send a stamped, self-addressed, business-size envelope to the Secretary, California Macadamia Society, P.O. Box 1290, Fallbrook, CA, 92028.

Master Gardener Program

by Gus Schlapfer

Have you ever wondered who to contact to help solve some horticultural problem you encountered in your garden? Some people refer to nurseries, friends, or acquaintances. Now, you can call an expert, a Master Gardener, who may answer your question immediately, gather the information required and call you back, or even forward the information to you later.

The Master Gardener Program was initiated in 1972 in the state of Washington, and now is being carried on in 20 states, including California. It provides information and technical assistance on gardening to the community through the use of trained and certified volunteers. Mr. Vincent Lazaneo, the Cooperative Extension Farm Advisor, who also has a weekly column in the San Diego Union newspaper, started the Master Gardener Program in San Diego County in 1982.

If you have a desire to learn more about plants, and a willingness to help others garden more successfully, you can apply to become a Master Gardener. Applications are carefully screened, and those chosen for the course receive 50 hours of initial formal training in horticulture from the University of California Cooperative Extension Advisors, specialists, faculty from the University, and many other knowledgeable people. Subjects include botany, soil and water management, weed, disease and pest control, fertilizers, growing vegetables, fruit trees, and ornamental plants, drip irrigation, landscape management, and many other appropriate subjects. After participants complete the training program and pass the final examination, they are certified University of California Cooperative Extension Master Gardeners at their graduation.

In return for their free training, Master Gardeners are expected to give 50 hours during the following year to a variety of activities that help others in the community to learn more about gardening. Emphasis is placed on group activities. Some of these functions include: answering phone inquiries about gardening at the County Farm Advisor's Office, working on local garden research projects, giving informal garden talks and demonstrations, holding garden clinics, helping friends and neighbors in their gardening, providing technical assistance to the community in the area of horticulture and home gardening, producing video tapes for cable broadcasting programs, working on research projects at horticultural experiment stations, manning an annual exhibit at the San Diego County Fair, and writing articles and book reviews for this magazine.

Three classes of Master Gardeners have been graduated in the County of San Diego with about 70 active Master Gardeners still participating in the program. The next class is scheduled for the fall of 1986 with recruitment beginning in the Spring of 1986. Approximately 30 to 35 students will be selected from applications to commence classes in April or May 1986. Unfortunately, there are never enough openings to accommodate all the candidates. The classes are made up of local people from all walks of life who have one common denominator: a love for growing things, and the desire to pass their expertise on to their community.

If you need horticultual information or assistance in solving your problems concerning gardening, and you live in southern California, call a Master Gardener at the County Cooperative Extension Office, telephone (619) 565-5571, each day Monday through Friday between the hours of 9 a.m. to 3 p.m.. The Master Gardener volunteers on duty at the extension office have a large library at their disposal as well as the expertise of most of the Farm Advisors. They are eager to help you.

If you would like to write or visit the office, the address is: Master Gardener Program, University of California Cooperative Extension, 5555 Overland Avenue, Building No. 4, San Diego, California 92123.

If you do not live in the San Diego County area, check with your Farm Advisor to see if there is a Master Gardener service in your county or state.

Gus Schlapfer is Vice-President of the Master Gardeners in San Diego county and sits on the Board of the San Diego Epiphyllum Society.

Master Gardener

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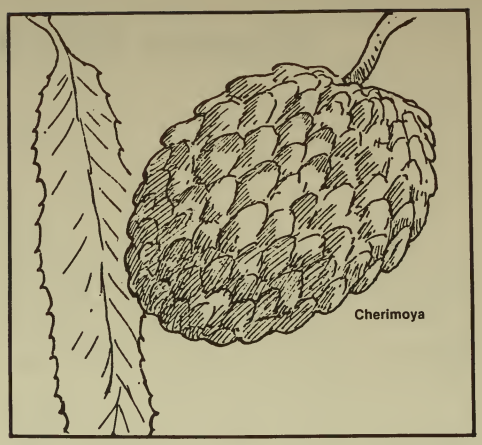
CHERIMOYAS:

Past, Present ... and Quite a Future in Southern California

by Norman C. Ellstrand
and Janet M. Lee


Cherimoya

The late 1800's and early 1900's were a time of high excitement for California horticulturalists. The seemingly continuous flow of plant materials from the tropical and subtropical areas of the world lead to constant experimentation with a multitude of new species. Citrus, avocado, and a number of other tree species emerged as important fruit crops in California as a result of that period of experimentation. But what happened to some of the species that didn't become major crops?

The cherimoya was one species introduced from Latin America at that time. The green fruit is clearly homely, resembling a pine cone more than the typical tropical fruit. But once properly ripened and sliced open, the similarity comes to an abrupt end. The custardy flesh, punctuated by shining, black, dime-sized seeds, is smooth and flavorful, characterized by some to be a combination of papaya, banana, and pineapple. Because it was (and is still) considered to be the best tasting of all the New World fruits, the cherimoya was thought to have a strong future in California.

However, the experimental horticulturalists soon realized that the cherimoya tree has two substantial shortcomings. First, the species is not very frost-tolerant, generally enduring temperatures no lower than 25° F. Second, and most important, fruit set in the cherimoya can be very sporadic and those fruits formed can be very misshapen.

The first shortcoming restricted the planting of cherimoyas to a coastal strip about 15 miles wide from Santa Barbara to the Mexican border. The second shortcoming was found to occur because of the absence of a natural pollinator and the lack of self-pollination. The cherimoya flower is dichogamous; that is, the male and female phases are separated in time. Art Schroeder of UCLA discovered that the grower could best overcome the pollination problem by hand-pollination.

But by that time, mechanization, the popularity of other crops, and the high cost of labor for hand-pollination reduced the cherimoya to a novelty fruit. By the early 1970's Armstrong Nursery, which had championed the fruit and registered many of the varieties, stopped selling the tree altogether. Irvine Ranch had a grove of cherimoyas for decades but removed the trees at about the same time.

Enter the 1980's, yuppies and nouvelle cuisine; an interest in exotic fruits and vegetables, the more exotic, the better. Enter an influx of immigrants from the Asian and Latin American tropics. Immigrants who know the cherimoya and its relatives and are willing to pay for them. Is it any wonder that the cherimoya is regaining some of its popularity?

Still, many of the problems remain, and some new ones have appeared. In particular, during the long period of disinterest in the cherimoya, records regarding the varietal identity of trees has been lost. Varieties have become confused; many new, undescribed and unregistered varieties have appeared. But cherimoya varieties can vary considerable with regard to quality of flavor, season of fruit maturity, seediness, and cold hardiness. How do we now identify trees?

Unfortunately, if you see one cherimoya tree, you've seen 'em all. The inconspicuous flowers and velvety leaves show very few, if any inter-variety differences. Fruits can sometimes show subtle differences in the bumpiness and shape of the large scales, but differences in fruit texture on a single tree can exceed the differences between varieties. A method of identifying varieties must depend on characteristics that are different from variety to variety but are fixed within varieties.

A technique known as isozyme analysis has been developed in the last few years for variety identification in everything from camellias to citrus and avocados to date palms. This technique

involves the biochemical analysis of plant enzymes, which are direct gene products. Unlike leaf shape or fruit texure, enzymes do not vary within a plant or between members of the same clonally-propagated variety.

Our laboratory had used isozyme analysis for a number of other purposes, before we heard about cherimoyas. After tasting the fruit, we were hooked and quickly set about to find out whether we could match our research program with this captivating fruit.

The question of variety identification presented itself immediately. Identifying varieties became like a detective novel, hunting down trees of known identity and comparing them with questionable material. We found that cherimoyas behave well as genetic subjects and that each variety has its own enzyme "fingerprint".

We'll share a few of the new mysteries we've encountered and solved. The Pierce Ranch near Santa Barbara was the source of cherimoyas in southern California for many years. As a result, the 'Pierce' variety is one of the most common varieties in California. As we began to analyze a number of 'Pierce' trees from different groves, we realized that two different enzyme genotypes were going under the same name. When we had a chance to analyze some material from the Pierce Ranch itself, we found that both types of trees occured there. The obvious solution to the mystery is that when material was disseminated from the Ranch, no one had realized that at least two types of 'Pierce' were present. The problem was confounded by the fact that the 'Pierce' variety has never been formally registered, so that nothing had been written about its morphology that could have tipped off nurserymen that they were working with diverse material.

Just such morphological clues made Bill Nelson of Pacific Tree Farms realize that something was amiss when he received cherimoyas from the Escondido area labelled 'White'. Bill had been working with other material marked 'White' or 'Dr. White' that corresponded to the written description in the formal registration of the variety. The new material just didn't match. He wisely named the new material 'Escondido White' to keep it separate. Surprisingly, when we analyzed the 'Escondido White', it proved to have exactly the same genotype as one of the 'Pierces' we had encountered.

Unfortunately, like a good mystery novel, we find we are uncovering new questions as fast as we answer others. In many cases, we have found the original tree is now gone to urban development. The large number of unregistered varieties adds to the confusion because the location and morphology of the original tree is unknown. Examples like the 'Escondido White' show us that plants somehow get renamed along the way.

But we are convinced that we can unravel the identity and history of cherimoya varieties with help from growers and the files of cherimoya enthusiasts like Art Schroeder. In the meantime, we are pursuing other lines of research on the cherimoya such as testing whether certain varieties produce more fruit pulp per seed and trying to breed a more cold tolerant variety.

If you haven't tasted the cherimoya, we encourage you to do so. They should be appearing with increasing frequency in markets from San Diego to Santa Barbara from January to April this coming year. We are confident that you will agree that this fruit, at once tasty and homely, has quite a future in California.

Dr. Norman C. Ellstrand and Janet M. Lee work in the Botany and Plant Science department at the University of California in Riverside, California. Dr. Ellstrand recently received the California Rare Fruit Grower's "Researcher of the Year Award".

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The Genus Notocactus

(Echinocactinae)

by Dorothy Dunn

The beautiful and free-flowering **Notocacti** belong to the large and diverse **Echinocactus** group, which also includes such a variety of plants as Astrophytums, Ferocacti, Fraileas, Gymnocalyciums, Parodias, Echinofossulocacti, and the familiar 'Golden Barrel', to mention just a partial list. Whereas the genus was at one time included under **Malacocarpus** (now **Wigginsia)** by Britton and Rose, Backeberg segregated the two genera as well as keeping separate two other genera, **Brasilicactus** and **Eriocactus,** which are now usually included under **Notocactus.** It has also been suggested that a new genus **Brasiliparodia** - be erected for the controversial group of so-called "Brazilian Parodias" **(Notocactus rechensis, N. alacriportana, N. brevihamatus,** and **N. bueneckeri),** based on their habitat, growth form, flower structure and seeds. Buxbaum and Krainz suggested the transfer of all the groups - Eriocactus, Brasilicactus, Wigginsia, and the "Brazilian Parodias" - into the single genus Notocactus, and this proposal has gained fairly wide acceptance.

There are at least thirty species of **Notocactus,** inclusive, all South American in origin (the generic name derives from the Greek, meaning, literally, "southern cactus"), with their distribution being predominantly from north to southern central and east Argentina, through Uruguay and Paraguay to southern Brazil. The largest number of species are found on the Uruguay-southern Brazil border. The older described species are found principally around the first settled areas near Buenos Aires, while more recent discoveries tend to come from the more remote regions in the interior of Brazil. Many of the early species described as coming from Uruguay can no longer be found in their original habitats, probably because of the inroads of "progress" and "civilization" created by man — construction, agriculture, grazing of domestic animals, etc. However, they generally can still be found further north, as they were usually the more widespread species and in Uruguay were at the exteme edge of their range. The most widely-distributed species such as **Notocactus ottonis** can be found over virtually the entire Notocactus range.

The habitats of most **Notocacti** are not really typical of xerophytic plants. Although they vary from the dry, well-drained hillsides of Brazil to the grassy pampas of Argentina, the average rainfall is quite high - between twenty and forty inches per year, with the dry season being usually quite

Notocactus Leninghausii at Cooper's Nursery
Photo by Wilbur H. Glover

short. Average temperatures are relatively high, with occasional frosts in some areas, and they are often found growing beneath thin shrubs which protect them from the scorching sun. Their root systems are generally widespread and somewhat fibrous, and they seem to prefer a slightly acid soil.

Most **Notocacti** will flower when very young. The flowers are borne on top of the plants and are usually large and conspicuous. The majority of them are of a satiny-yellow hue, although they can also range from orange-reddish shades **(N. haselbergii, N. horstii)** through pink or purplish **(N. rutilans, N. herteri, N. uebelmannianus)** to lime-green **(N. graessneri).** The plants are often self-fertile, notably in the case of **N. rutilans, N. graessneri, N. leninghausii,** and **N. haselbergii.** The plant bodies are generally globose or shortly columnar, and some species offset quite profusely from the base (particularly **N. leninghausii, N. neobueneckeri, N. rechensis, N. magnificus** and **N. ottonis).** A few species have the rather unfortunate tendency to offset haphazardly at various other places on the plant bodies, which somewhat spoils their symmetry.

The **Brasilicactus** species **(N. graessneri** and **N. haselbergii)** are self-fertile, as mentioned before, do not offset, and are differentiated from all other South American spherical cacti by the very short floral tube. They are among the earliest Notocacti to bloom in the spring.

The **Eriocactus** species **(N. leninghausii, N. claviceps, N. magnificus,** and **N. schumannianus)** are all characterized by their more columnar growth habit and relatively large flowers. Backeberg

maintains that the greater body size, fruits and seeds, and the strong apical wool clearly differentiate these species from all other Notocacti.

Most species of **Notocacti** are easy and rewarding to grow. Many of them seem happier when grown in some degree of shade, but with strong indirect light. **Notocactus scopa** in particular is extremely beautiful when grown under quite low light conditions. Some species will tolerate temperatures down to 20 degrees F. They make ideal pot plants, but many species, given adequate drainage, can be grown right out in the open ground. They should be watered rather sparingly during the coldest, wettest winter months, and moderately during the growing season. They seem to have no specialized soil requirements other than the usual stipulation of good drainage.

Few pests attack a healthy **Notocactus;** the persistent mealy-bug appears to be the most serious, and occasionally red spider-mite.

Propagation is by seed, or by rooting the offsets of the clustering varieties. Although Notocacti grow extremely well on their own roots, they are sometimes grafted. **N. neobueneckeri** in particular seems to respond to grafting by offsetting more prolifically.

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Dorothy Dunn is a cacti propagator for Cooper Nursery in Vista. She collects plants from Baja California for the Wild Animal Park hillside, and is active in the San Diego and Palomar Cactus and Succulent Societies.

Seniors Take Heart

by Keigh Hall

How do you get hooked on a hobby? Take gardening for instance: exposure; classes; envy; can't go the mud and the weeds; trial and error? Take your pick. I've taken a big stab at most.

Exposure in Buffalo, New York did nothing but see me cringing in the weather, trowel and seed packages in young unwilling hands.

Later, blessedly, we moved to San Diego where the hotel clerk in Jacumba (our first night in California) said, "Man you're moving right into paradise". And, since, there hasn't been much to disabuse that happy belief.

Envy? yes, drooling and green-eyed over banks of bloom's —somebody else's.

Our first house had plenty of ground, but it had adobe and wild mustard high enough to hide tigers. Not too cheerful a layout, but oodles of challenge! Here's where the trial and error raised their heads with a vengeance.

Finally, I learned of Anderson's garden classes headed by the knowledgeable Ada Perry.

The learning and help I received there certainly gave me a big push. No bloomin' picnic but, at least, I found out more of what to do (and not) which made the hard part more satisfactory instead of frustrating.

I truly suggest that gardeners, beginners, or otherwise, join a garden club for further help, friends, and slips — more fun that way, not to mention money saving on plant exchanges.

Now in later life, weak knees, and bad back, I rejoice in a mini front yard which you wouldn't believe — it contains so many trees, bushes, and plants carefully positioned and trimmed for enough light, and room to grow. The fact that it is above a wall does away with the stoop factor.

Then, there's my backyard — actually just a space 6'x30'. To create room (and no bending), there are many shelves and hangers for — are you ready? — 143 pots of plants plus a tiny rock garden under a relocated set tub containing 2 trees, a trailing plant, and some hyacinth bulbs. Santa Claus, I am afraid, would have as much trouble walking through this area as squeezing down a modern chimney.

So I don't want anyone to tell me they haven't room for a garden. Even my front porch holds 96 pots of all sizes. Of course, I have house plants. Shall I go on?

Seniors in small places take heart, and if yours is into gardening, you really do have possibilities.

While I carry on with the decorative things, my Cambodian neighbors, in Golden Hill, also have tiny plots of vegetables and plants they are more familiar with. We could all learn a bit of their methods and different foods.

Augmenting the greeenery in our part of town are over one hundred trees beautifying our city streets. All were donated and planted by the Golden Hill Action Group.

Each home, lucky enough to have received a tree, accepts the responsibility of watering and caring for said tree. Come by in ten years and see just how pretty they are.

Keigh Hall is a member of Convair Gardening Club and is garden adviser at the Neighborhood Outreach Program in San Diego, California.

The Tussie-Mussie

by Patricia Wellingham-Jones

At the 1984 AIS convention at Longwood Gardens, Kennett Square, PA a new ivy was named. The naming followed a demonstration by Phyllis Dunham and was doubtless inspired by the charming nosegay of ivy, herbs, and flowers she created before an interested audience. 'Tussie-Mussie' was the name chosen by unanimous vote of all present.

Tussie-mussie is an ancient word. It is seen in its archaic form in the first English Latin dictionary in 1440, Promptorium Parvulorum Sine Clericorum, Lexicon Anglo Latinum Princeps, Auctore Fratre Galfrido Grammatico Dicto, and appears as

"Tyte Tust or Tusmose of Flowrys or
othry herbys (tyte tuste or Tossemose)
= olfactorium".

A further lengthy note mentions "Tuttie, nosegay, posie or tuzzie-muzzie". Jennings West Country Glossary uses "Teesty-Tosty", which refers to cowslip blossoms tied in globular form and tossed to and fro in a game called teesty-tosty.

Cathleen M. Maxwell, Herbarist at American Museum in Britain in 1968, mentions that the Webster English Dialect Dictionary defines tossy or tostie as a cowslip ball; tisty tosty is the game played with the floral ball; and, interestingly enough, its origin seems to stem from Gloucestershire, Wiltshire, and Somerset where cowslips still grow wild on the chalk downs, to be gathered by children. Maxwell goes on to say that the same Webster Dictionary defines "Tuzzy-muzzy" as a west-country name for old man's beard or wild clematis, thus meaning dishevelled, ragged, or confused. The term "Tozy-mozy", meaning slightly intoxicated; thus cozy, warm, or snug is used. While this seems far removed from the fragrant nosegay under discussion, a vague connection, if one doesn't mind stretching a point, may be found in the intoxicating aroma of various herbs giving a sensation of cozy well-being.

A current Webster Dictionary (1976) mentions tuzzy-muzzy, also tussie-mussie (tusmose, tussemose): in the archaic-garland of flowers; nosegay. One final mention is that tussie mussie is derived from the old English tussymose which in turn is derived from tosty (bouquet) which comes from tusk (wisp of hay).

CLASSIC COMPONENTS

Regardless of how the name came about, the actual collection of astringent and fragrant herbs and flowers was gathered together to solve a common, less savory problem. In medieval England, fresh air was considered unhealthy, as was bathing. To make life in small, confined rooms a bit pleasanter for those who could afford it or had access to a garden, herbs were clutched in a cloth and carried about, to be sniffed as needed for refreshment. This forerunner of aerosol deodorants was carried in the hand, where the warmth of the skin could release the aromatic oils. Different scents were considered to have different effects: thyme revived the tired; sweetbrier made one cheerful; others stimulated memory, or relieved tension. The nosegays were used to ward off disease as well as bad smells.

In the early colonies of America, tussie-mussies helped keep old people, as well as young, awake during the interminable Sunday sermons of the time. They were called "meetin' bouquets" and usually contained southernwood, fennel, and dill - for sniffing or nibbling.

The Victorians carried tussie-mussies to romantic lengths. The popular language of flowers used the nosegay to deliver messages with the rosebud, symbolizing love and beauty, the favored central flower. Generally there was a focal point of a lovely bloom, surrounded by circlets of feathery

lad's love (Artemisia abrotanum), then rings of herbs, all with specific meanings emphasizing the theme, interspersed with the flowers of lavender, marjoram, mint, garmander. The outer ring was often a collar of gray santolina, though there was no fixed method and no two alike. Some herbs were not as enjoyable as others. Rue, despite its gentle associations, can be unpleasant near at hand; asafoetida comes as a distinct shock and is better left at the far end of the garden.

In the language of flowers, ivy represents friendship, fidelity, and matrimony; an ivy sprig symbolizes assiduousness to please. Victorian ladies carried especially decorative tussie-mussies to dances and balls. They favored a rosebud surrounded by clove pinks, heliotrope, lemon verbena, mignonette, rose geranium, and other scented leaves.

Holders for the little nosegays varied from the earliest pieces of cloth wrapped around a few stems to Victorian fancies such as a French silver holder with wooden handle, to silver gilt with a curved handle, to elaborate filigree (which led to lace paper doilies), to a plastic cup filled with Oasis (today's flower arranger's choice).

TODAY'S TUSSIE-MUSSIE

Far from fading out of favor, the tussie-mussie has many contemporary uses. Brides have long chosen its romantic, old-fashioned look of soft flowers and fragrance bound with trailing ribbons and lace. In accordance with old custom, England's Queen Elizabeth II was given a tussie-mussie at her coronation.

The little nosegays provide a welcome relief for patients and staff alike in a hospital room. In fact, Betty Stevens began a tussie-mussie program at a Connecticut hospice in a deliberate attempt to enhance the quality of life for these terminally ill people. The idea originated with her asociation of the healing spirits of fragrant herbs. She began bringing gifts of tiny bouquets which she tucked into small spice jars collected from friends. It soon became a tradition, adding to the pleasure of all those in a room, and taking a minimal amount of space on a bedside table. There have been some added fringe benefits, too. The doors of memory open, a lift to the spirits occurs, discussions about herbs and other garden subjects become lively, people share experiences and evade loneliness, at least for a time. Stevens uses whatever is currently blooming in her garden: johnny-jump-ups, calendulas, love-in-a-mist, roses for the central flower. Favorite herbs are lemon balm, basil, southernwood, mints, summer savory. For the frilly edge she likes lady's mantle, lamb's ears, scented geranium leaves. She doesn't try to make the tight, stiff Victorian nosegay, but gathers the flowers loosely in the hand and binds

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David E. Mann, Escondido, is a watercolor artist.

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them with florist-wrapped wire.

Other uses for tussie-mussies include luncheon favors, congratulations on a success, corsage for a dance, even long-distance hellos in a large envelope and mailed. A thoughtful thank you for a hostess in the language of flowers might consist of honeysuckle for generosity, marjoram for courtesy, chamomile for patience, thyme for courage and activity, mint for cheerfulness, lavender for luck, ivy for friendship, rosemary for remembrance, geranium for gaiety.

The tussie-mussie Phyllis Dunham made for us at Longwood Gardens began with an oasis-filled holder, useful for nosegays and wedding arrangements. Around the lower edge she spaced mint, alchemilla, salvia, lemon balm, orange mint, apple mint, thyme, bedstraw, santolina. Along the upper outer edge went blue borage flowers. Miniature pink roses filled the center and delicate ivy trails were tucked into the bottom edge. Lavender and rosemary were added where needed to fill in and the finishing touch was a lace frill and pink ribbons. This irresistible floral fantasy was presented to Virginia Meitzner and inspired the whole group to name our new ivy 'Tussie-Mussie' in its honor.

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Patricia Wellingham-Jones is Editor of the Ivy Journal published by the American Ivy Society. Note: Much of the literature cited in this article was provided by Patricia Hammer, Horticulturist, Longwood Gardens, Kennett Square, Pennsylvania.

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Gloxinia

The interesting sister of the African violet

by Tineke Wilders

Gloxinia by Michael Snitslaar

The attractive gloxinia plant is a lesser-known relative of the extensive Gesneriad family, to which the ever popular African violet belongs. Its trumpet-shaped flowers come in numerous colors, especially in shades of red and purple.

The botanical name for this showy plant, **Sinningia,** is derived from the name of the curator of the Botanical Garden in Bonn, West Germany, Wilhelm Sinning, who lived from 1794-1874. Its more common name, gloxinia, is taken from a Strassbourg physician by the name of Benjamin Peter Gloxin.

Its original habitat is Brazil, where about twenty different flowering tuberous kinds grow in tropical rain forests. The stem of the gloxinia is succulent and its leaves, all growing off the stem, are velvety and drape themselves almost horizontally over the edge of the container.

During the winter months nurseries offer the tubers for sale. Select plump and healthy ones from a reputable place. Tubers are very sensitive to cold conditions, particularly frost. However, full grown plants can be found almost any time of year in florist shops and in many nurseries and garden centers, usually during the summer months and holiday seasons.

After you bring a full-grown plant home from the florist or receive one as a gift, it is best to keep it in a medium warm, but humid atmosphere. Air that is too dry will cause the leaves to curl. Keep the plant protected from direct sunlight and avoid cold draughts at all times.

WATERING — When watering use lukewarm water and avoid spilling any on the leaves, since it will cause rotting. If the soil is too wet, or if the temperature of the water is too cold, the stem can rot and the leaves will collapse. Use a watering can with a long spout so you can reach in between the spread-out leaves. Even though the gloxinia needs an above average humidity, do not mist the leaves or flowers because it will stain them.

PLANT FOOD — As far as feeding is concerned, while the plant is actively growing and in bloom, add a regular mixture of fertilizer high in phosphorus such as 15-30-15 NPK or 10-15-10 NPK. This will improve growth and stimulate more flowers.

When the gloxinia has stopped producing new flower buds, gradually hold back on watering and stop fertilizing. This is the time when the plant starts to prepare itself for a well-deserved rest period. While leaves are withering and turning yellow and dry, remove them from the tuber with a slight twist. When all foliage has dried up, dig the tuber out of its pot. Trim off all the dead and dried roots and store the tuber in dry peatmoss in a place where it is not too warm, around 60° F.

PLANTING THE TUBER — After a couple of months, replant the tuber and start right from the beginning again for another flowering season. Plant the tuber, with its smooth side down, just below soil level. Plant one tuber per 5-to-6-inch pot and use an all-purpose potting soil. Keep the soil slightly moist by watering sparingly.

Once the first leaf sprouts, more leaves will grow soon. At that point, increase watering, making sure it does not become soggy or dry out completely. Allow only one shoot to develop from the tuber, the strongest; remove all others that might emerge. This way, all the energy will be forced into producing a luxuriant plant with velvety blooms.

Tineke Wilders is a Dutch-Canadian; she writes a regular Q & A indoor plant column in the San Diego Union and did a garden feature in the Oct. 1985 issue of San Diego Home & Garden Magazine.

THE MAGIC OF SEED STARTING

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These are just a few of the many reasons gardeners give when starting their gardens from seed indoors.

There's a certain mystique about it all. Maybe it's the reward of a beautiful flower or vigorous tomato plant from one tiny seed; or maybe, it's the thrill of being in at the creation.

Starting from seed lets you get your hands in the soil early when it's still inclement outdoors. The variety available in some seed catalogs allows trying unique varieties not widely available. In the entire garden world, seed is still a bargain. It's no wonder so many gardeners start their gardens from seed. How do they do it? It's easy!

Remember a few basics (besides the seed) to ensure good germination. You'll need a good, sterile container or tray, a good soil medium and good soil moisture and humidity while seeds are germinating. Seed can be started in anything from milk cartons to coffee cans, but a sterile container especially designed for seed starting is insurance of greater success.

Some of the most popular "containers" are peat pellets, such as Jiffy 7 Plant Starter Pellets, which contain pure spaghnum peat moss surrounded by netting. When soaked in warm water, the pellets expand to form a growing environment that combines container and soil medium in one. The entire Jiffy 7 can be set in the garden, pot and all, eliminating transplant shock.

The key is the pure sphagnum peat moss. It provides moisture holding capacity with aeration ideal for plant root growth. The same benefits are gained from Jiffy Pots, individual peat pots; Jiffy Strips, attached peat pots; and Jiffy Mix, a disease-free soil mix that contains peat moss, vermiculite and starter nutrients.

Jiffy Mix provides an ideal growing medium -- another important factor in seed starting. Used with Jiffy Pots or Strips, trays or other containers, it provides the perfect combination of ingredients to help produce high germination and get young plants off to a fast, healthy start.

Read the seed packet carefully which will give you any special growing conditions needed and sowing dates.

Some seeds need to be covered, some left uncovered. Check the instructions! Place your newly-sown seeds in a warm, moist area. High humidity is important. Many gardeners use a transparent plastic wrap around the tray or container to keep humidity high. An ideal solution is Carefree's Stacking Windowsill Greenhouse which lets air and light in but retains warmth and humidity.

Once seedlings appear, remove the plastic, move them to a cooler area, but give them at least 6 hours of sunlight. The seedlings will turn and bend toward the light source, so turn them once a day for straight growth (or grow under fluorescent lights).

When the first true leaves appear (the leaves that look like mature foliage), it's time to make more room for them. If several plants are growing in the same container, the shortest plants can be clipped, leaving the best seedling, or they all can be removed and transplanted into larger containers.

To transplant, carefully remove each plant and separate it from its neighbors. Grasp the seedling close to the surface and gently pull it away. With a pencil, or dibble, make a small hole in the soil mix and insert the plant. Cover to the same level it was growing in the seed flat and water gently and evenly.

Some seedlings, such as begonias and petunias, are tiny and develop slowly, so be patient. Others, such as tomatoes and marigolds, are large and robust and grow more quickly.

Cucumbers, zucchini and melons don't like to be transplanted, so start them in Jiffy-7's or Jiffy Pots which can be planted, pot and all.

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THE CARE AND CULTURE OF PAPAYA

(Carica Papaya)
SOLO

by Ruby Law

Although papayas are native to tropical America, many are now growing in California from San Diego to San Francisco. Under tropical conditions papayas have been known to reach 25 feet. Most California plants mature at about one half that size.

Each plant can have one of three flower types; male, female, or bisexual which has both male and female parts. It is therefore best to plant at least three plants close together to assure pollination. Papayas will normally flower and set fruit within one year. The fruit takes about eight months to ripen and when ripe, will change color from green to yellow.

Warm soil in winter is the key to successful papaya culture. Cold, wet, or soggy soils cause root rot. It is recommended in inland areas that papayas grow close to the house or a large structure to provide some reflected heat on cold winter nights. Papayas do not have evasive root systems and will not crack sidewalks or foundations. An alternative to planting papayas in the ground is to plant them in a container such as a half barrel with rollers for easy movement to a protected area. The container must have good drainage to prevent root rot.

Since papayas are considered to be heavy feeders, citrus and avocado fertilizer is recommended 6 times per year in small quantities. Water thoroughly, then allow soil to slightly dry before watering again. Grow papayas in partial to full sun, protected from strong winds.

Ruby Law, from Rancho Cucamonga, California, is an avid gardener, specializing in growing rare fruits. She is seated as Chairlady of the California Rare Fruit Growers Foothill Area; meetings held in the Los Angeles County Arboretum in Arcadia.

SCHOOL

University of California in Los Angeles, CA (UCLA) is offering several horticultural classes during the Winter quarter:

Landscape architecture _ contact the UCLA Extension Department of the Arts at (213) 825-9414, or write P.O. Box 24901, Los Angeles, CA 90024.

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Soils and fertilizer, general botany, plant materials for interiors, landscape and garden construction, designing and making the home garden, and plant selection for garden design composition, call UCLA Extension at (213) 825-1735, or write the Division of Gardening and Horticulture at P.O. Box 24901, Los Angeles, CA 90024.

San Diego's Fair

by Barbara Jones

The San Diego Flower and Garden Show of the Del Mar Fair has achieved a national reputation as the largest and most diverse horticultural exposition west of the Mississippi.

Widespread horticultural interest and expertise characterizes our area, and there are many garden clubs with general and specific interests. This year's fair will have a special exhibit showcasing the creative talents of some of our major garden clubs. A different club will be featured in a 2-day period during the Fair. This garden club floral scene will be a display featuring the prominent use of fresh-cut flowers arranged to depict the theme of a movie.

Andrew Morrow, Floriculture Superintendent, has planned some marvelous horticultural exhibits for the 1986 Fair. They are always spectacular.

Many people do not know that they can enter their home-grown plants in the Fair. Premium books will be available from the Del Mar Fairgrounds (Southern California Exposition, Del Mar, CA 92041) or at the San Diego Floral Association office in Room 105, Casa del Prado, Balboa Park. Premium books list the various categories that will be exhibited during the Fair, the dates, information on how to enter, etc.

It is fun to enter, and more fun to win. Hope to see you at the "County Fair" from June 19 through July 6, 1986.

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Small Clustering Mammillaria

by Frank C. Thrombley

PHOTO BY WILBUR H. GLOVER

Mammillaria Schwarzii

Within this genus of over 300 species, there are a number of interesting plants that form small mounds, clusters or clumps. They are indeed a pleasure to grow and very rewarding with their flowers and many heads. Best of all they can be grown in a relatively small space.

For this article the word small means plants that can be grown in 5-8 inch pots for many years.

Cultivation is not difficult but all of them require bright light so they can form their tight clumps without etiolating (bleaching). When preparing the soil mix, add enough pumice to assure excellent drainage. One must remember that these plants cannot tolerate their roots growing in soggy soil. Fertilizing at half strength through the growing season is also recommended. Do not forget to let them 'rest' during the winter months. Ease up on the watering schedule and do not fertilize. Some hobbyists let their plants go completely dormant for a few months. For me, the weather is the main factor. If it is a warm, rainless winter, I will water the plants on occasion. If it is a cold wet winter, I will with-hold all watering.

MAMMILLARIA lenta is one of my favorite plants and should be included in every collection of those who like small clumping plants. It has fine dense white spines which cover the flattish heads. It is a slow grower and requires bright light so that it can reward you with its white flowers and pink stripes. The elongated old seed pods are also very showy and quite large for such a small plant. They do have a carrotlike tap root so they need some depth to the pot for good growth. Of the few plants I have, two are listed here for size comparisons.

Ten-headed plant in a 5-inch inside diameter pot, with lots of room to grow.
Five-headed plant in a 4-inch inside diameter pot,
will be transplanted in two years.

MAMMILLARIA baumii is a many headed plant with densely white spines, up to 18mm long covering each head -- a truly handsome plant. The best, however, is when it produces its mass of scented bright yellow flowers. The plant in my collection has 37 heads with and overall diameter of 5-inch and planted in a 6-inch diameter shallow pot.

MAMMILLARIA reko var. **leptacantha** is a recently discovered plant by Alfred Lau. One must be careful when purchasing this plant to be sure that it is from an offsetting clone. Normally it is a single headed plant which will grow quite large before putting out offsets. This plant is superb with its long curving central spines which cover each head in a spherical shape. A plant that must be seen to be appreciated. My plant has 4 heads and fills a 4-inch inside diameter pot, with the spines having an overall diameter of 5 inches.

MAMMILLARIA camptotricha is a distinctive and well-known species with 6 to 8 central spines up to 27mm long. The spines are white to gold, bristlelike, twisting and curving, which cover each head. The small white flowers do not protrude beyond the spines and are surprisingly starlike when you discover them. It also produces flowers sporadically throughout the year. A plant with 10 heads and an overall diameter of 5½-inches is one of my friends.

MAMMILLARIA perbella. This species forms low-growing mounds of dicotomously dividing heads. The 10mm long deep pink flowers circle each head and is indeed a beautiful sight. This is a slow growing plant, but a real pleasure to watch it grow throughout the years into its very pleasing appearance with symmetry of form. My plant has eight heads and is 4½-inch diameter.

The following is a short list of a few plants in a wonderful collection of mammillarias.

M. sinistrohamata. Size: 4-inch diameter x 2-inch high with 31 heads.

M. picta. Size: 6½-inch diameter x 3 3/4-inch high with 33 heads.

M. schiedeana. Size: 8-inch diameter x 3½-inch high with 14 heads. This is another plant that you
should be sure is a clumping type when very small. I have a plant with a single head that is 5½-inch tall x 3 3/4-inch diameter and is just now sending out pups.

There are others to choose from such as **M. jaliscana, nejapensis** and **mazatlanensis.** I hope this article will interest you in discovering these small, delightful, and fun to raise clumping plants.

Mammillaria Nivosa

by Frank C. Thrombley

Mammillaria nivosa is one of the few species endemic to the islands of the West Indies. They are found in the tiny country of Turks and Caicos Islands, through the islands of Desecheo, Puerto Rico, Culebra, St. Thomas, Buck Island, and Antigua Island, which is the furthest south in that chain.

Backeberg reduces **M. nivosa** to a variety of **M. flavescens.** Notwithstanding that **flavescens** is the older name used by at least two other botanists. Hunt claims that **flavescens** is insufficiently described and equates it "probably" to **M. nivosa.** Borg reduces **M. flavescens** to a variety of **M. simplex. M. simplex** grows wild on the coast of Venezuela and on the Islands of Curacoa, Margarita and Patos. There are many islands between Antigua and Patos, a distance of approximately 1100 miles, but neither **M. nivosa** nor **M. simplex** grow on any of them. It is sufficient to say that **Mammillaria nivosa** is a valid name, at least for this article.

Its more tropical origins suggest somewhat higher temperatures are required for successful cultivation. The Turks and Caicos Islands experience a typical tropical maritime climate. East-southeast tradewinds predominate and the annual air temperature fluctuates very little. The average daily minimum temperature ranges from 72° F in January to 80° F in August. The average daily maximum temperature ranges from 80° F in January to 88 F in August. The coldest recorded air temperature between 1900 and 1968 was 60° F. The humidity rarely drops below 65 percent. The average rainfall is between 23 and 30 inches among the Turk Islands. The cacti and other plants of these islands must then be well adapted to the drying conditions of abundant sun, warm temperatures, constant wind, and little rainfall, while coping with high humidity.

John B. Iverson, Department of Biology at Earlham College, Richmond, Indiana, spent 27 weeks in the Turks and Caicos Islands between 1973 and 1978. He wrote an article published in the Cactus and Succulent Society of America Journal, Vol. 52, January-February, 1980 issue, in which he described the habitat of **M. nivosa.** He found them to be very abundant where they occur, but on the rocky northeastern half of Middleton Cay, he wrote: "There they were so common that it was impossible to walk across the limestone in many areas without crushing specimens and/or perforating your shoes. Clumps of 10 to 15 individuals were not unusual." He wrote that it was amazing to see full-grown plants growing in shallow saucerlike depressions in the smooth limestone. No tools are necessary to extricate many of them. One simply lifts the cactus off the rock, the shallow diffuse roots tightly holding its ounce or two of soil — like a pot bound plant. In March this soil is bone dry, and these cacti are flowering and fruiting profusely. Iverson said that he found none except in direct association with limestone. They simply did not occur on sandy soils, even a meter from the rock.

Rene Zahra, horticulturist and a prolific writer from Malta, wrote an article for the National Cactus and Succulent Journal, Vol. 36, September 1981 issue, titled **Mammillaria nivosa** link. He wrote: "In its native habitat **M. nivosa** grows on flat outcrops of limestone. Other situations might be too damp and humid for mammillarias, and therefore these limestone outcrops provide the best drained places on these islands."

On these outcrops, **M. nivosa** grows in every crack and in every shallow depression. Once the seedlings start to grow, wind-blown soil and dry vegetable particles are collected around them. This material is held in place by the rather long spines of this species, and therefore as the plants grow larger more and more material is collected around them. It follows from all this, that on these limestone outcrops there is very little vegetation other than the mammillarias, and thus these plants are exposed to sun and wind.

It would certainly be prudent to cultivate these plants in shallow pots, well drained soil, no stagnant water, warm temperatures, and a sunny location. Finally, for those who like wooly plants, **M. nivosa** has taken its name from the abundant white wool which is produced in the axils between the tubercles (small knoblike prominences) when the plant reaches flowering age.

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Photo by Wilbur H. Glover

Lemon Trees

SMALL AND LARGE

With the price of lemons these days at the supermarket, a lemon tree in the backyard seems very appropriate. Even if you are short on space, you can plant a dwarf lemon tree in a container. Remember, the fruit is not dwarf in size, only the plant.

Lemon trees are easily grown producing fruit year round in mild climates and even in the interior valleys, it is common to get two crops per year. Since the fruit is acid, it is not necessary to wait until they are ripe to pick but you should wait until the yellow shading is complete on the entire lemon. If the lemons are allowed to hang on the tree very long, they will turn pithy and have little juice.

The ideal lemon has a smooth skin, seems heavy for its size, and has a good yellow color. Thick skin varieties are less likely to produce much juice. If you are fond of the lemons you buy at the store with that tart taste, that makes a terrific lemon meringue pie, plant the 'Eureka' or 'Lisbon' varieties. If a little less tang is to your liking, then the hybrid 'Improved Meyer', which is most likely a cross between a lemon and an orange, is the one you want. The 'Ponderosa' is a large lemon which is also a lemon-citron cross. Whatever your choice, they are available as standard sized trees, or as dwarfs, which have a more shrub appearance.

Lemons are easy to grow and unlike other citrus fruits actually like to have their sometimes rangy branches trimmed. They are vigorous in growth as well as in crop production. One should remember that they do use up the food you give them, so a regular feeding schedule should be followed.

Watering is also important with consistency being the key. Watering deeply for ground planted trees should be every 3-4 weeks year round. For single tree plantings, the placement of 1+ hours of slow water per inch of trunk diameter gives you a starting point. Just remember that on the whole, this plant has a root that goes at least as deep as the plant is tall. Drinking and eating is accomplished by the tiny hair roots that are always closest to the newest growth.

In the meantime, remember that lemon trees provide an incredible fragrance: lemony and fresh, and the trees are evergreen providing attractive foliage year-round.

Garden News Release from California Association of Nurserymen.

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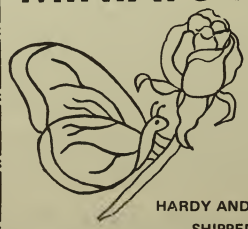

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Book Reviews

By Mary Lou Orphey

GREAT AMERICAN AZALEAS, A Guide to the Finest Azalea Varieties, by Jim Darden 1985 Published by Exclusive Distributor, ISBS, Inc., P.O. Box 1632, Beaverton, OR 97075 8½ x 11 in. 96 pages, Paperback $9.95 + $1.50 for shipping.

This guide to the finest azalea varieties is a wonderful resource book to use in selecting evergreen azaleas for placement in the garden.

Over 140 color photographs show color, size, and type of bloom. There are lists of outstanding azaleas for every color, form, and group discussed. The text is packed with helpful information. Finally, there is a list of 300 excellent American azaleas in alphabetical order by variety. Included in this list is bloom color, diameter, form, season, height, habit, zone, group, and genealogy for each of the 300 varieties.

Azaleas require a well drained acid soil and a moderate amount of water and nutrients. This book provides the knowledge and inspiration for growing beautiful azaleas; all the reader must do is provide the proper environment.

WHAT EVERY HIBISCUS GROWER SHOULD KNOW, written and published by The American Hibicus Society, P.O. Drawer 5430, Pompano Beach, Florida 33064. 1979 6 x 9 in. 100 pages, Paperback $7.00

Long considered to be Queen of Tropical Shrubs, the hibiscus produces magnificent flowers in a broad range of color. It is grown outdoors in tropical regions of the country and has been grown successfully as an indoor plant in various parts of the country.

Topics included are the culture and care of hibiscus, fertilizing, protecting against insects and diseases, and propagation. The description of the most commonly seen nutritional deficiencies of hibiscus is especially helpful. There is advice on how to decorate with hibiscus and how to photograph them.

Although this comprehensive guide empasizes growing hibiscus in Florida, it offers pertinent information to hibiscus growers everywhere.

HIBISCUS CATALOGUE, by The American Hibiscus Society Charitable Trust, P.O. Drawer 5430, Pompano Beach, Florida 33064 8½ x 11 in. 12 pages, Paperback $7.00.

The catalogue has close-up color photographs of over 140 varieties of hibiscus. Along with each photo is a description of the color, size and shape of the bloom, and type of growth.

POPULAR EXOTIC CACTI, In Colour. by Edgar & Brian Lamb. 1985 Published by Blandford Press, Link House, West Street, Poole, Dorset, UK., Distributed in the US by Sterling Publishing Co., Inc. Two Park Avenue, New York 10016 5 3/4 x 7 3/4 in. 176 pages, Paperback $6.95 US, $8.95 Can.

This paperback has full color close-up photographs of a hundred different genera, with information on the habitat, description and cultivation of each one. In some cases, footnotes and common names are noted.

The authors have chosen more true cacti than other succulents. In addition to cactaceae, families included are agavaceae, Crassulaceae, Ficoidaceae, Piperaceae, Asclepiadaceae, and Lilaceae. With few exceptions, they are shown in flower for easier identification.

One learns where to grow them, soil requirements, what to grow them in, how often to water, pests and diseases, and propagation.

CULTURE OF THE PHALAENOPSIS ORCHID, by Bob Gordon 1985 Published by Laid-Back Publications, 276 East Shamrock, Rialto, CA 92376 8 3/4 x 11 118 pages, Paperback $13.95 + $1.00 Shipping. CA residents add 6% sales tax.

Practical advice is given in this down-to-earth book on growing Phals for pleasure. It provides an opportunity to learn from an experienced hobbiest.

Topics included are light, temperature and humidity control, watering, fertilizing and air movement. Cultural aspects discussed are potting, control of fungi and bacteria, viruses, pest control, setting flower spikes, seedling care, and propagation. There are ideas on modifying greenhouses, and sources of plants and supplies.

According to the author, "If you are now growing phalaenopsis or thinking about growing them, this book is for you. It is intended as sort of a volksbuch for non-scientists and, to that end, is expressed in non-threatening, user-friendly language. The objective is to take some of the mystery out of growing phals and allow the grower to enjoy the flowers without having to make them a career."

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ORCHID GROWING ILLUSTRATED by Brian & Wilma Rittershausen, Photography by Andrew Cooper. 1985 Blandford Press, Link House, West Street, Poole, Dorset UK, Distributed in the US by Sterling Publishing Co., Inc., Two Park Avenue, New York, NY 10016 8 3/4 x 11¼ in. 159 pages, Hardcover. $19.95

This is an excellent book on growing orchids. The text is concise and well-written. There are photographs on nearly every page.

The book is divided into four sections. The Orchids, Equipment for Greenhouse and Home, Potting and Propagation, and The Art of Orchid Growing. Anyone needing guidance in repotting a cymbidium, cattleya or paphiopedilum will find the advice he needs. There is a superb chapter on hybridization.

Guaranteed to be of interest to orchid enthusiasts, this informative book would make a fine addition to their library.

Know Your Garden Series: TREES & SHRUBS, Julie Grace, General Editor. 1985 Published by Timber Press, P.O. Box 1631, Beaverton, Oregon 97075 9 x 11¼ in. 199 pages. Hardcover $24.95

This new edition is the third revision among eleven editions since first being published in 1965. It is a guide to almost 600 flowering trees and shrubs suitable for use in landscaping gardens and larger areas.

There are 143 pages of close-up plates showing portions of trees and shrubs in flower, berry or foilage. Included with each photograph is the scientific name of the plant, its height at maturity, and the scale size of the illustration.

General information is given on each family. Trees and shrubs included are Acacia, Azalea, Camellia, Heather, Eucalyptus, Australian Grevilleas, Protea, and Rhododendrons. This is a superb reference book for gardeners and horticulturists.

JERRY BAKER'S HAPPY, HEALTHY HOUSE-PLANTS, by Jerry Baker, Illustrations by Erv Zachmann, 1985 A Plume Book, Published by New American Library, 1633 Broadway, New York, N.Y. 10019 7¼ x 9¼ in. 268 pages, Paperback, $8.95 US, $11.95 Can.

Jerry Baker's latest angle since his book PLANTS ARE LIKE PEOPLE is a slick paperback written for casual gardeners. The cartoons and captions are witty. The text is entertaining.

Over a hundred suitable house plants are listed with brief notes on their needs and growing habits. There are chapters on lighting, watering, feeding, temperature, humidity, insect control, and various other subjects.

From the acknowledgements at the front of the book, it appears the author may have a business association with certain horticultural suppliers, so one should keep this in mind when the author recommends specific products.

ALL ABOUT CITRUS & SUBTROPICAL FRUITS, an Ortho Book published by Chevron Chemical Company, Ortho Books, 742 Bancroft Way, Berkeley, CA 94710 1982 8¼ x 11 in. 96 pages, Paperback, $5.95

Find out about the varieties of avocado, banana, cherimoya, grapefruit, kumquat, lemon, lime, mandarin, orange, feijoa, fig, guava, kiwi, litchi, loquat, macadamia, mango, papaya, passion fruit, persimmon, and white sapote that grow well in subtropical areas. Information is given on adaptation, pollination, propagation, site selection and planting, care, pests and diseases, harvest and storage, for each of these subtropicals. A few recipes are included.

According to the USDA Plant Hardiness Zone Map, subtropical areas of the country are limited to most of California, a portion of southwestern Arizona and a small area in southwestern Texas. Anyone who lives in these areas, has room to garden, and wants to enjoy the fruit of their labor is advised to read this excellent book on citrus and subtropical fruits.

THE CHECKLIST OF SPECIES, HYBRIDS AND CULTIVARS OF THE GENUS FUCHSIA Compiled by Leo Boullemier. 1985 Published by Blandford Press, Link House, West Street, Poole, Dorset, UK. Represented and distributed by Sterling Publishing Co., Inc. Two Park Avenue, New York 10016 5 3/4 x 8 3/4 in. 309 pages, Hardcover $17.95 US, $23.95 Can.

The first checklist was compiled by the British Fuchsia Society in 1975. Since then there have been several addenda published. This revised checklist includes the four previous addenda and also has been up-dated.

This extensive reference book is of particular interest to fuchsia growers. The description of species, hybrids and cultivars are arranged in alphabetical order. In addition to describing every known fuchsia, there is information on plant breeders and their achievements. There is a list of fuchsias suitable for training as bonsai, for climbers, and for hedges.

Considered to be the bible for fuchsia growers, this authoritative book is a necessity for those interested in authenticating fuchsia varieties.

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BEGONIAS: Margaret Lee

keep fallen leaves off foliage and pots.
remove dead leaves from plants.
protect plants exposed to heavy rains, especially semi-tuber and rhizomatous types growing in containers.
add more potting mix to keep roots covered where soil may be washed out of pots.
control slugs, snails, mealybugs, and loopers.
start in February, tuberous types for summer bloom.
start cutting back lightly on canes and shrub types about the end of February.

BONSAI: Dr. Herbert Markowitz

graft conifers during January, and the deciduous trees in February.
use a dormant spray such as copper, oil, or lime/sulphur mixtures - particularly on maples, quince, and other deciduous trees after they have been pruned.
watch for aphids and other sucking insects and spray accordingly.
do not fertilize your trees.
remember not to overwater; be sure to reduce watering during rainy periods.
keep deciduous trees in shade if there is warm weather in February, or they will start budding and sprouting.

BROMELIADS: Thelma O'Reilly

protect your plants from any cold - cover with newspaper at night.
be sure water does not freeze in cups in frost areas.
wait to fertilize until weather is warmer - late in February.
check cups and between leaves for slugs.
give added protection to soft, tender-leaved varieties.
protect new offsets against any cold damage.

CACTI & SUCCULENTS: Frank Thrombley

change your watering habits drastically if you have not done so in Nov./Dec. to protect from too much water.
thoughtfully consider allowing your cacti to go dormant; keep on dry side.
allow leaf bearing succulents that have lost their leaves to go dormant.
water and feed at half strength the winter-growing plants.
consider weather conditions and location of your plants; i.e. grown in glass house or protected area from winter rains. If in doubt, do not water. If it is a warm sunny winter, water sparingly to keep plants looking good.

CAMELLIAS: E.C. Snooks

plant, transplant, repot or otherwise move camellias.
make selections while the plants are in bloom. This is especially important with variegated cultivars.
graft new cultivars by the cleft method.
pin back leaves or tie branches to allow buds to open without damage.
fertilize with a 2-10-10 fertilizer for improved blooms. Iron may be used for increased color.
enjoy the 'Queen of Flowers' this prime blooming season.
cut bloom stem back to a growth bud or outward pointing leaf. Display bloom in a covered dish with only wet paper towels under the bloom - not in water.

DAHLIAS: Abe Janzen

dig any tuber left in the ground. By early January, the tops should be completely withered; cut off just above the soil level.
store tubers without dividing and leave on any soil that clings to them. Store in vermiculite or sand and keep in a cool place.
start in February to prepare the planting beds. Turn the soil; add humus; and fumigate. Dig in humus, equal parts of superphosphate and sulphate of potash - turn over well.
dig in fertilizer two or three weeks before planting.

EPIPHYLLUMS: Frank Granatowski

protect plants from unexpected frost and strong wintry winds.
bait for snails and slugs.
maintain preventative pest control by keeping plants free of debris and extraneous materials.
Spray with insecticides only if necessary. Avoid sprays with oil base.
prune out dead and unsightly growth, allowing more energy to be used by newer and healthier branches.
feed mature plants with a 0-10-10 fertilizer to promote blooming in spring. Either liquid or slow release granules can be used. If liquid is used, another application may be necessary in about 30 days.

FERNS: Ray Sodomka

water gently; don't soak during hot days; don't rely on rains either; check any hidden or covered plants to see they get water.
keep after slugs, snails, pill bugs, etc.; winter days do not stop them.
trim off old fronds in frost free areas.
fertilize platyceriums (staghorns); give bone meal, hoof and horn, or a high nitrogen liquid.
plant spores.

FUCHSIAS: William Selby

protect plants from frost in cold areas.
check container plants (pots, baskets, etc.) often for moisture; don't let plants dry out.
fertilize those plants cut back 60-90 days before; new growth needs food.
pot up those cuttings taken when pruning done; do not fertilize them for at least two weeks.
keep all plants clean of fallen leaves, blossoms, or other trash.
use insecticides or fungicides if you have a problem.

GERANIUMS: Carol Roller

water only when plants become fairly dry. Each watering should moisten the entire soil ball. Excess water should escape through the drainage holes.
prune any plants which have not been cut back. Some green leaves should remain on every stem which has been cut back. Lanky plants which were pruned in the fall can be pruned again to produce compact plants. Tip pinch the other plants which were pruned in the fall.
continue feeding a balanced fertilizer dissolved in water, using it at half the recommended strength every 4th or 5th watering, or as often as needed to keep plants from developing nutritional deficiencies.
make cuttings from the prunings. Shelter the cuttings from extreme weather conditions.
continue pest and disease control using products according to the manufacturer's directions.
give temporary shelter from freezing, if necessary.
rotate plants regularly for symmetrical shape.

GESNERIADS: Mike Ludwig

not water on cold, cloudy days or in late afternoon, to prevent many problems.
spray for pests and disease. There will be little or no damage to plants which are more dormant in winter.

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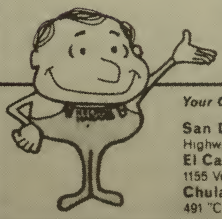

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prepare pots for the spring planting season; wash with hot water and let them stand overnight in Clorox solution to kill any disease. Wash thoroughly after soaking and let them dry.
Start achimenes rhizomes now. Place them in a damp bed of vermiculite in a show box; watch for mold on new growth. In 15 days or so, there should be signs of new growth, if temperatures are warm enough. Plant in a loose mix; keep barely moist until growth appears above the soil.
repot streptocarpus. Remove last year's flowering leaves and clean up plant.

IRIS: San Diego-Imperial Counties Iris Society
continue a watering program, especially if rains are light.
make a last planting of the bulbous iris for spring bloom.
start a regular spray program with copper oil spray to help control rust.
start in February to feed all iris with 0-10-10 liquid fertilizer; follow directions carefully and do not over-fertilize.
establish a regular program of snail, slug, and aphid control.
keep old brown fans off tall-bearded; good cleaning and spraying is helpful in pest control.

ORCHIDS: Charlie Fouquette
check moisture in pots of phals and cattleyas - do not be fooled by gray days.
give dendrobium nobile hybrids cool nights and no water to encourage bud growth; just keep moist.
stake up flower spikes on cymbidiums and place light flowered plants in bud and flower in a shady area.
dry out new world orchids - laelias, oncidiums, epidendrums, etc. Consider where the plants originated.
check burners and valves on heaters for leaks (use soapy water), and check wires to transformers, regulators and thermostats; all connections should be snug.
check all equipment in houses to protect plants and temperatures.
stake phals in spike so it will display properly.
water plants that have no pseudobulbs to store water. Fertilize and water in early part of day so plants will be dry by nightfall.
not overwater some cattleyas that are resting; also the equitant oncidiums are at rest.
remember your heating demands misting, and you must move the air gently, no storms.

ROSES: San Diego Rose Society
plant bare-root roses, mounding each bush with damp soil until new growth starts, to prevent dehydration.
prune roses; watch for dates of the pruning demonstrations in Balboa Park, San Diego.
give a good dormant spraying of bushes and the surrounding areas.
cultivate established roses as new growth begins and feed, using one cupful per bush.
give newly planted bushes a feeding of liquid fertilizer six weeks after planting.
start preventative spraying in February for mildew and aphids. Use one-half strength on new foliage.
add iron chelates after roots start growing; iron can only be absorbed by new roots.
supply adequate water, especially if no rains, when the rose bushes are growing rapidly.

VEGETABLES
start indoors the seeds of spring vegetables that can be transplanted, such as tomatoes, peppers, squash, and cucumber to be planted in the garden about the middle of March.
plant roots of perennial vegetables and berry plants in the garden; rain and cold weather are not likely to harm them.
plant plants of broccoli, Brussel sprouts, cabbage, celery, chard, cauliflower, and collards any time the soil is dry enough to work.
plant onion sets and make a second planting of lettuce, using started plants.

GREEN THUMB ITEMS
start plantings of gladiolus bulbs and make successive plantings at monthly intervals for flowers over a longer period.
plant hybrid amaryllis bulbs, with the tip of the nose just showing, in a sunny or semi-shaded area.
make marguerite cuttings from new tips.
be drastic and cut chrysanthemums back to the ground.
continue control of slugs and snails.
prune flowering trees and shrubs to shape the plants; use the flowers in arrangements or gifts to friends.
plant bareroot stock of deciduous trees, shade trees, shrubs, and vines.

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(Continued from page 164)

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13519 Poway Rd., Poway, 9:00 a.m.

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San Diego, CA 92119
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SOUTHWEST HEMEROCALLIS SOCIETY
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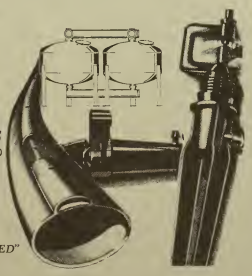

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Discover the extraordinary flora of Balboa Park, the San Diego Zoo and Presidio Park with the Offshoot Botanical Lecture Series.

Call 297-0289
for details

Offshoot Botanical Tours operates with permission from the Parks and Recreation Department and is a San Diego Convention and Visitors Bureau member.

CALIFORNIA GARDEN (USPS 084-020)
San Diego Floral Association, Inc.
Casa del Prado, Balboa Park
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